

Two Way ANCOVA Report

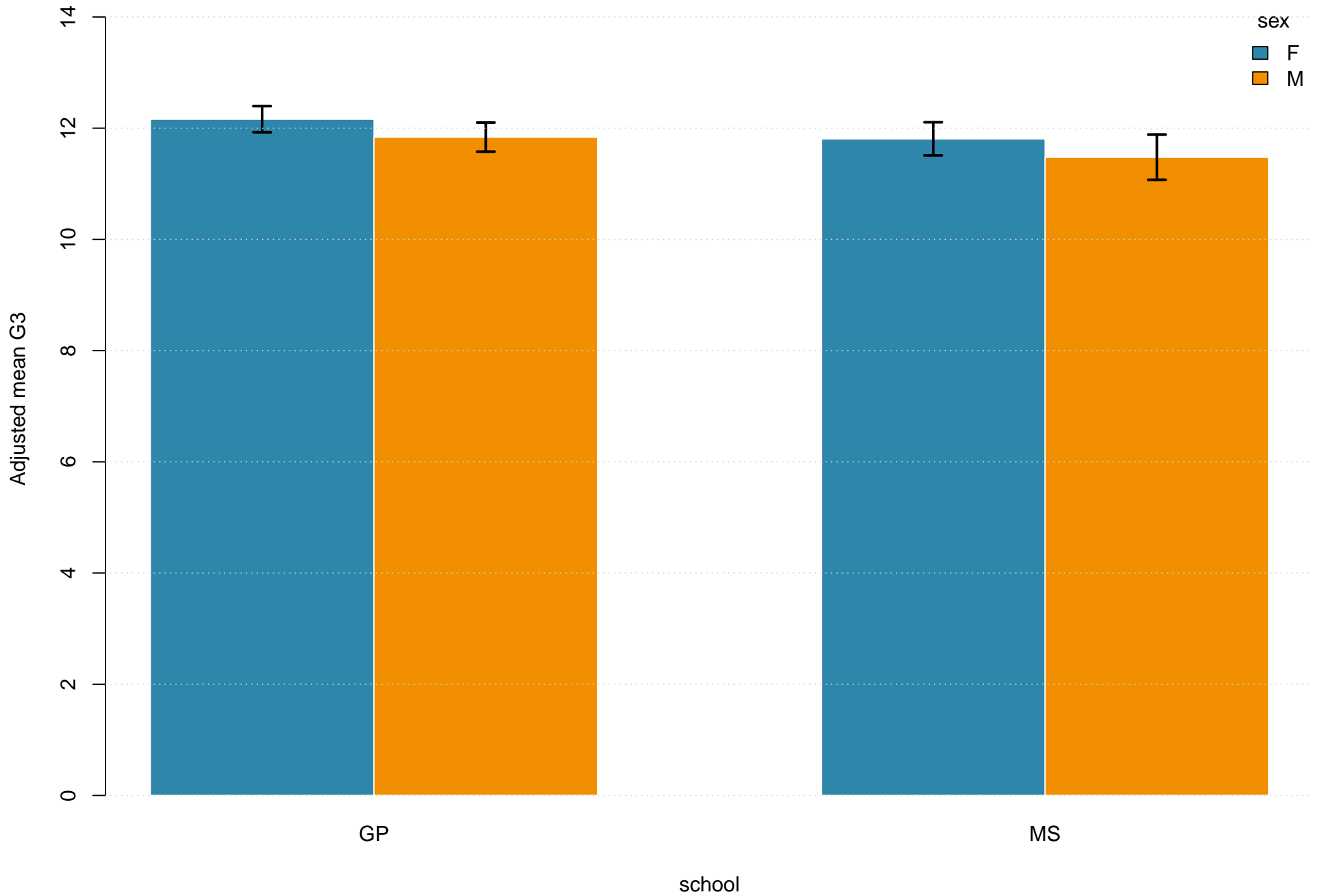
Outcome: G3
Covariate: G1
Factor A: school
Factor B: sex

Model: $G3 \sim G1 + \text{school} * \text{sex}$

Largest partial eta squared: $G1 = 0.685911$
Effect-size label: Large

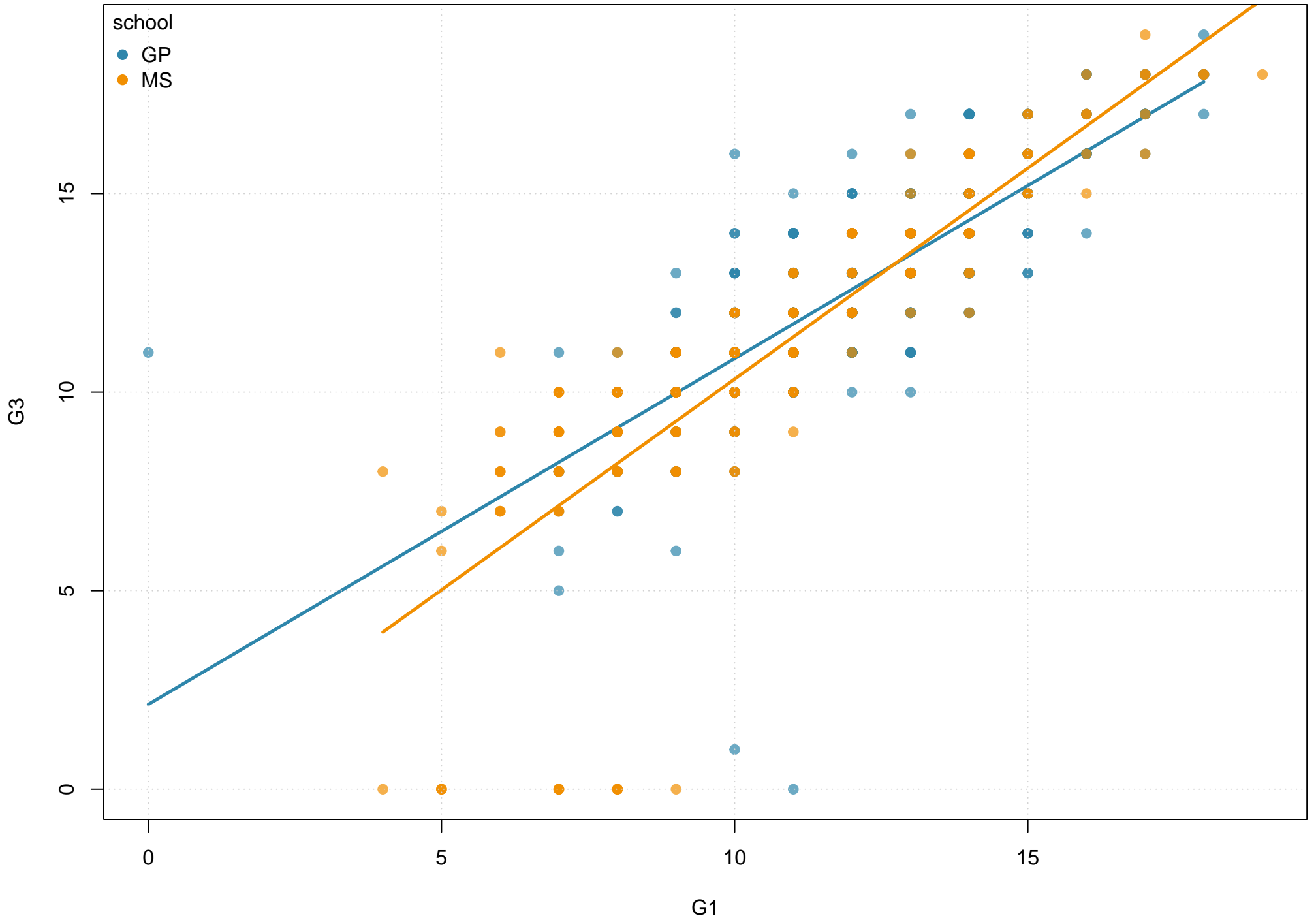
Two Way ANCOVA: Adjusted Means

Means adjusted at average G1 ; bars include 95% CIs.



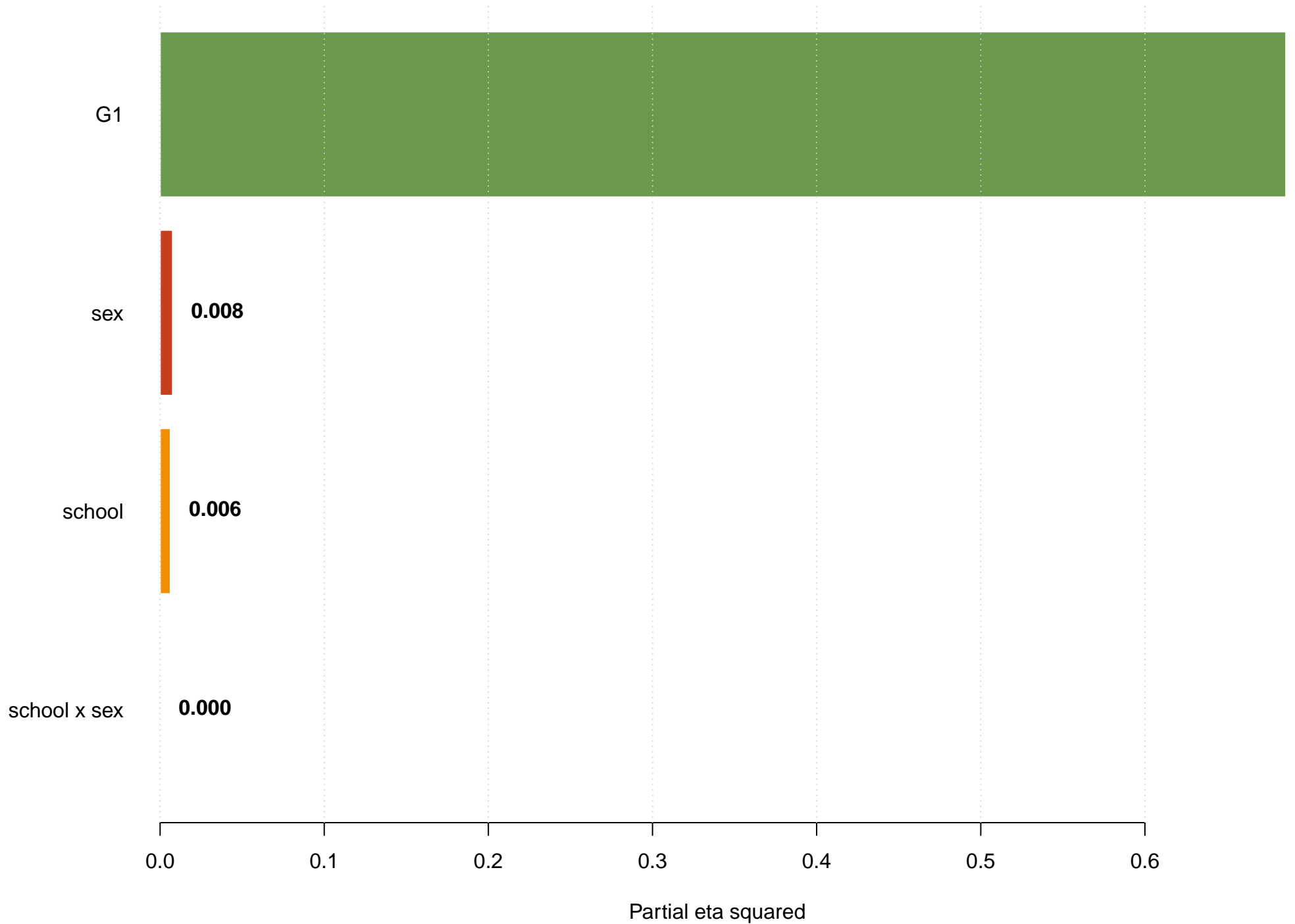
ANCOVA Covariate Relationship

Scatterplot checks how G1 relates to G3 across school groups.



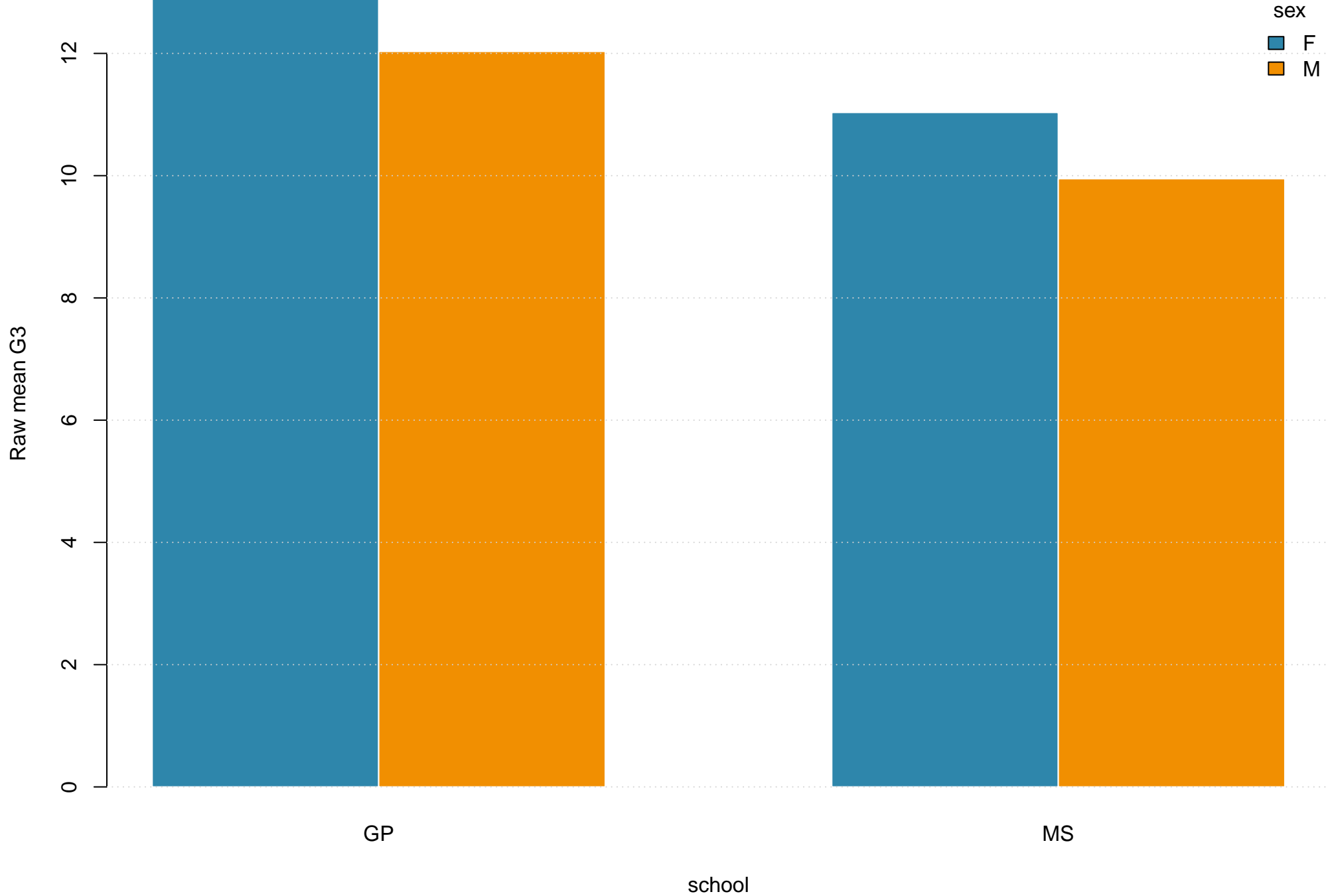
Two Way ANCOVA: Partial Eta Squared

Partial eta squared shows effect size after controlling for model error.



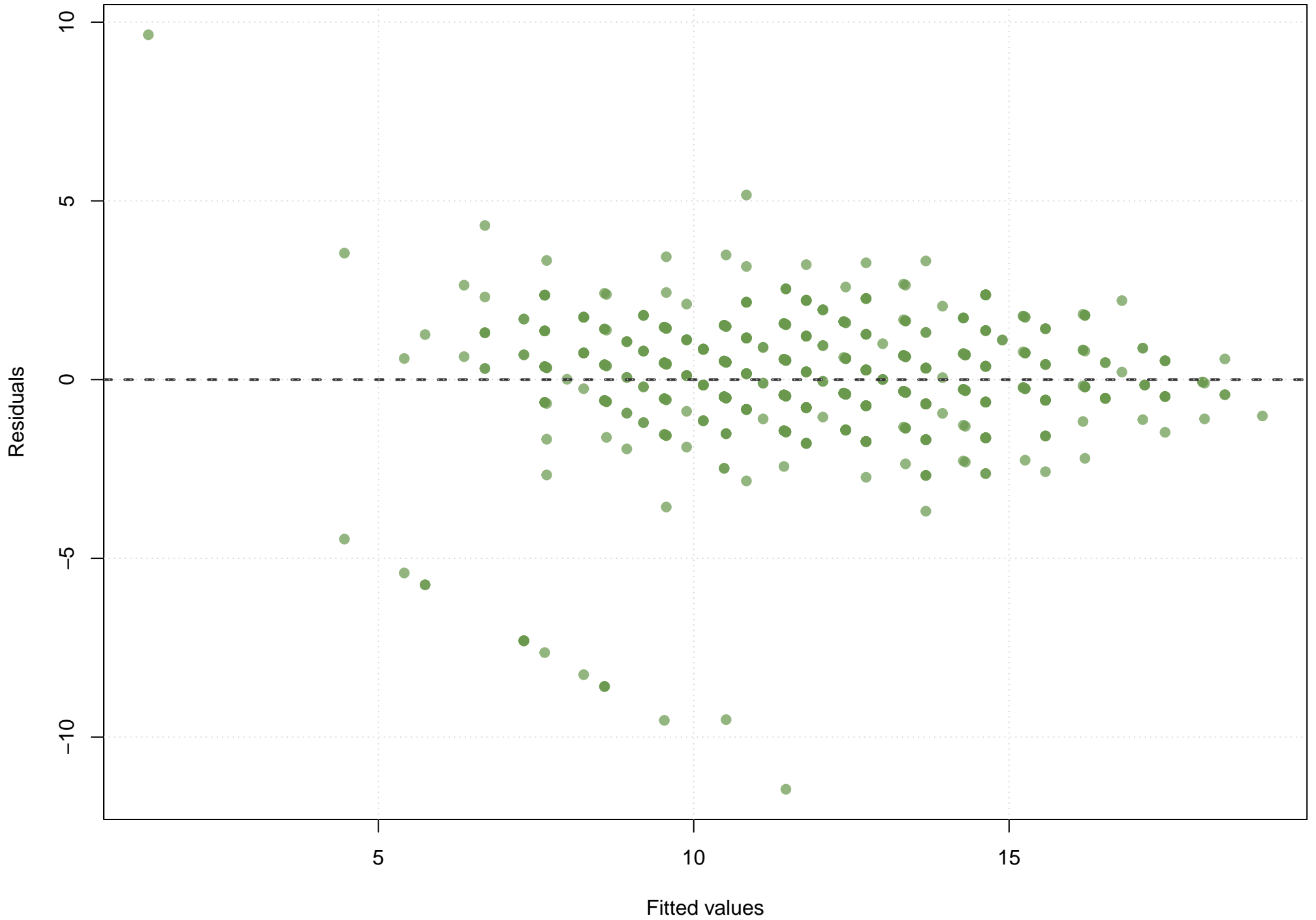
Raw Cell Means Before Covariate Adjustment

Compare this chart with adjusted means to see the influence of the covariate.



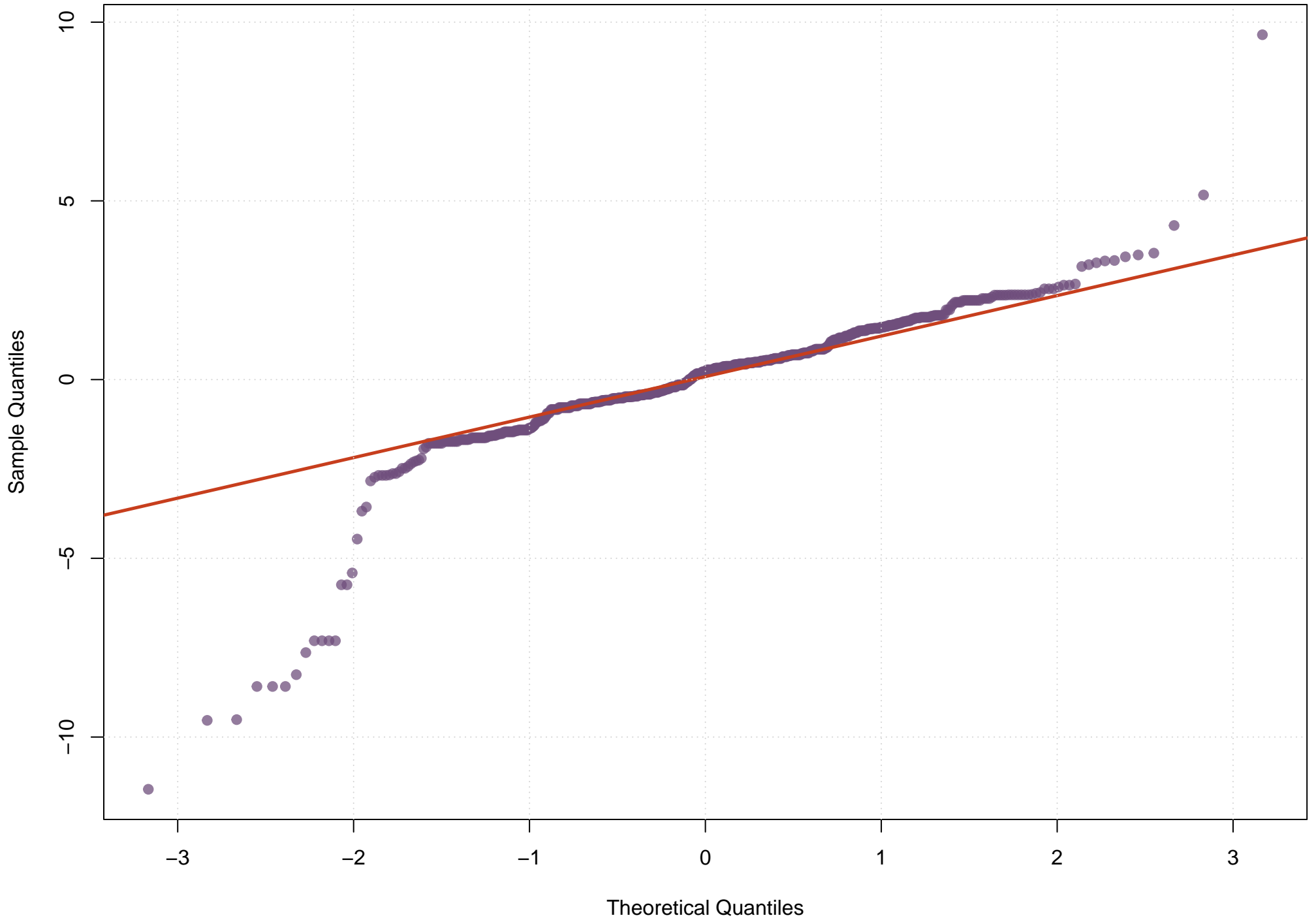
ANCOVA Residuals vs Fitted Values

A random pattern around zero supports the linear model assumptions.



ANCOVA Q-Q Plot of Residuals

Points close to the line support approximate residual normality.



Two Way ANCOVA Summary Table

ANCOVA effects are interpreted after controlling for the covariate.

| Effect | df | SS | F | p | partial eta squared | Decision |
|--------------|----|----------|-----------|------------|---------------------|-------------------|
| G1 | 1 | 4619 | 1406 | 4.263e-164 | 0.6859 | Reject H0 |
| school | 1 | 13.34 | 4.063 | 0.04425 | 0.0063 | Reject H0 |
| sex | 1 | 16.19 | 4.93 | 0.02674 | 0.0076 | Reject H0 |
| school x sex | 1 | 0.002236 | 0.0006807 | 0.9792 | 0.0000 | Fail to reject H0 |